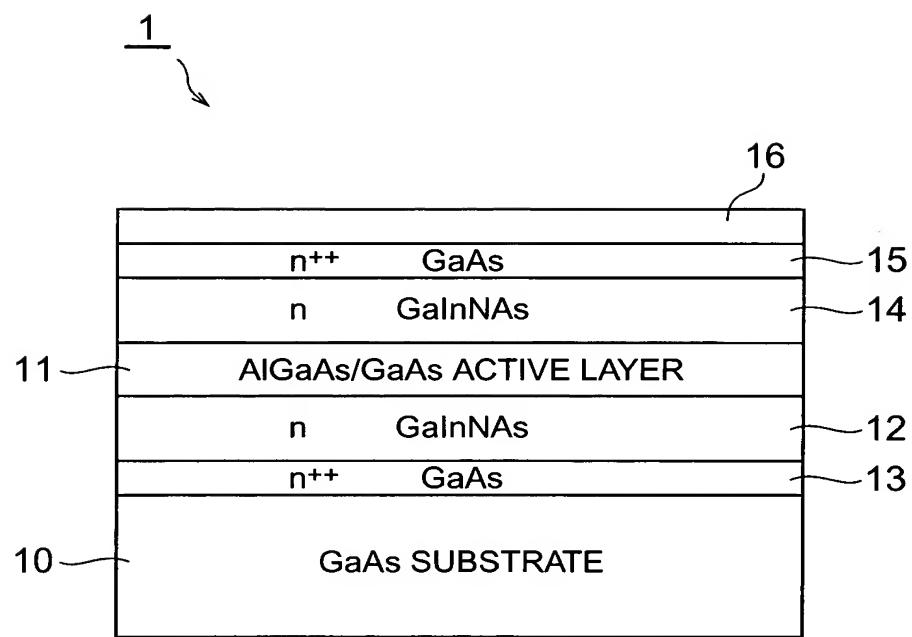


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**Fig.1**

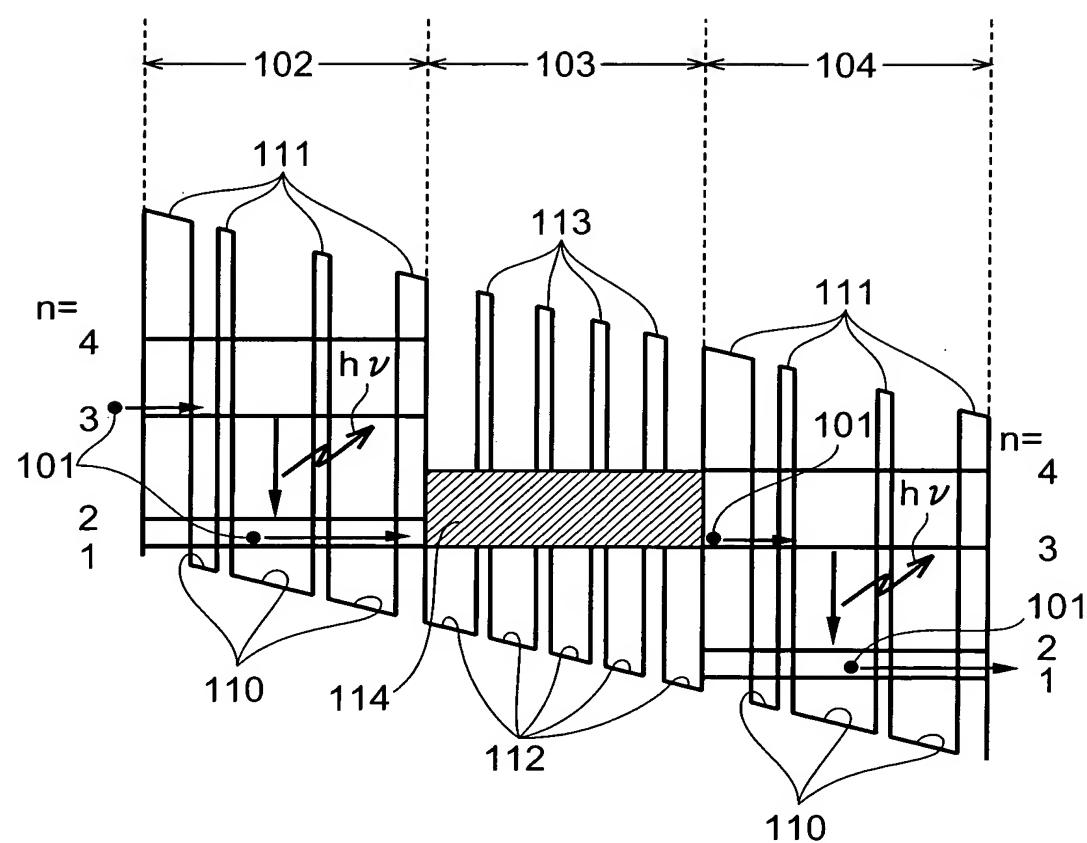


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***Fig.2***

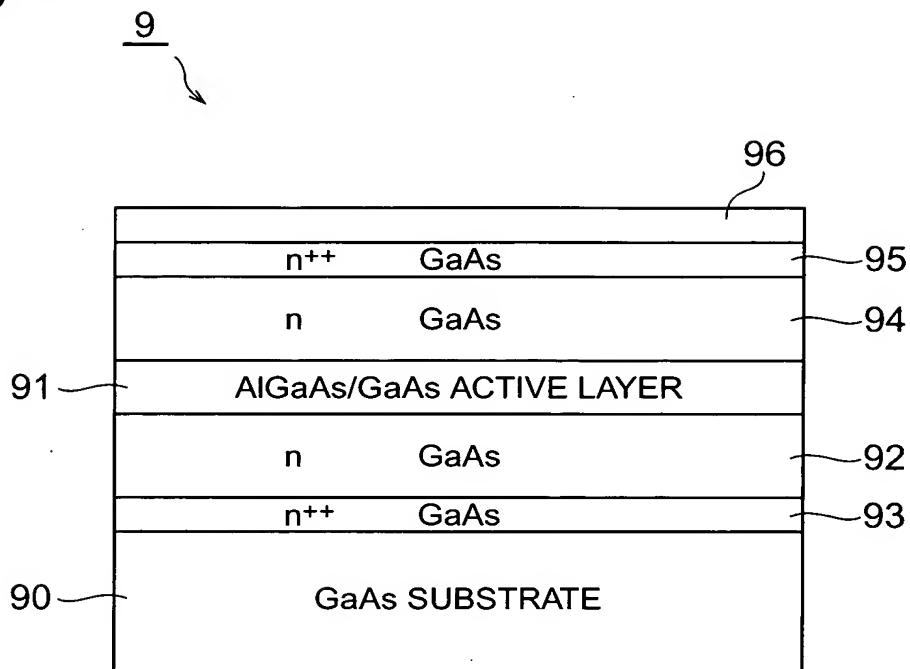


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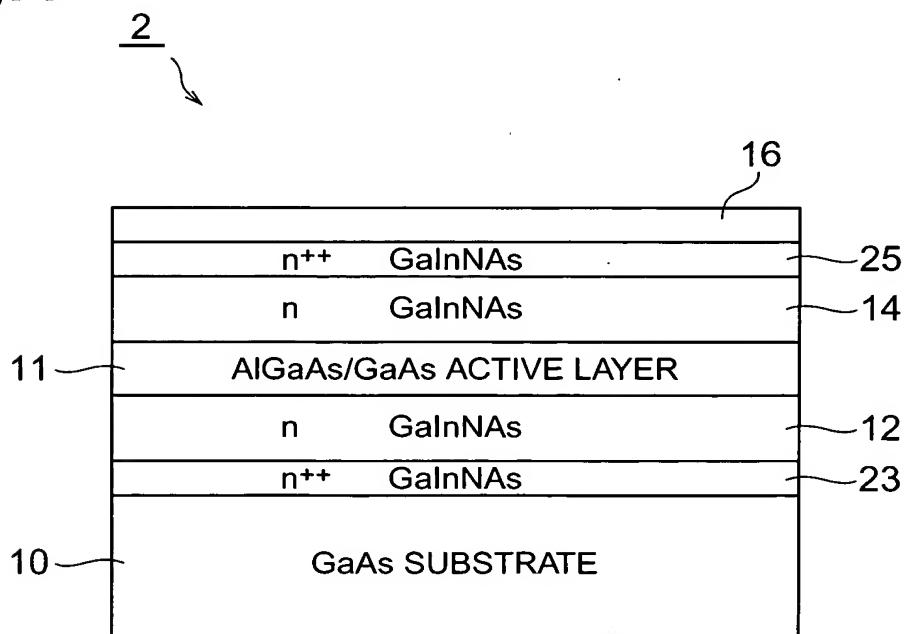
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**Fig.3**



**Fig.4**

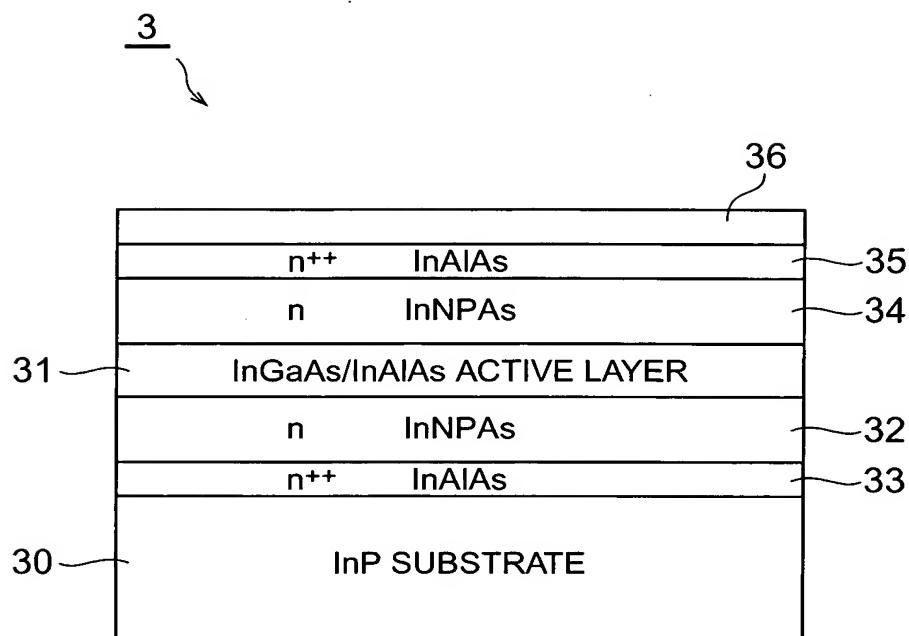


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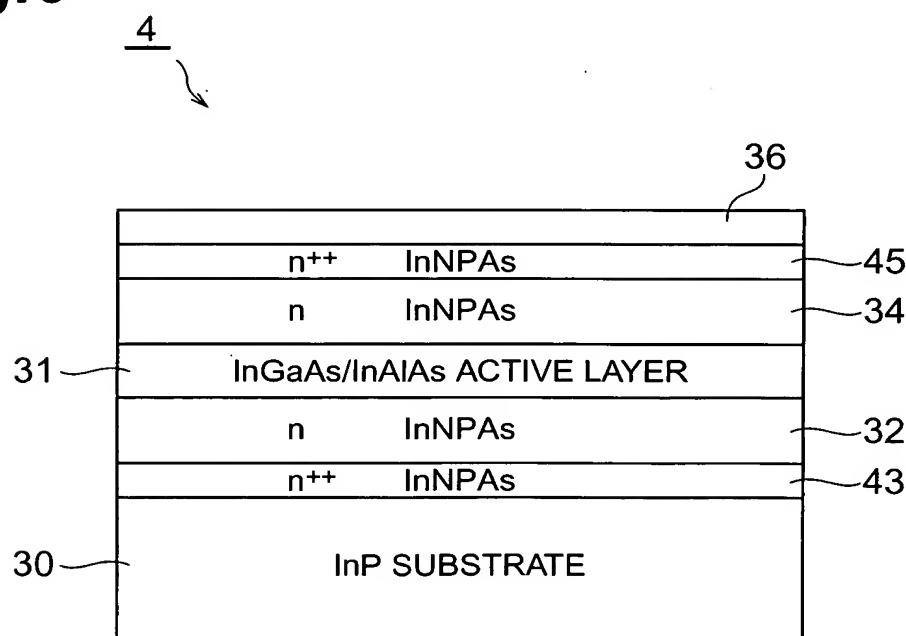
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**Fig.5**



**Fig.6**

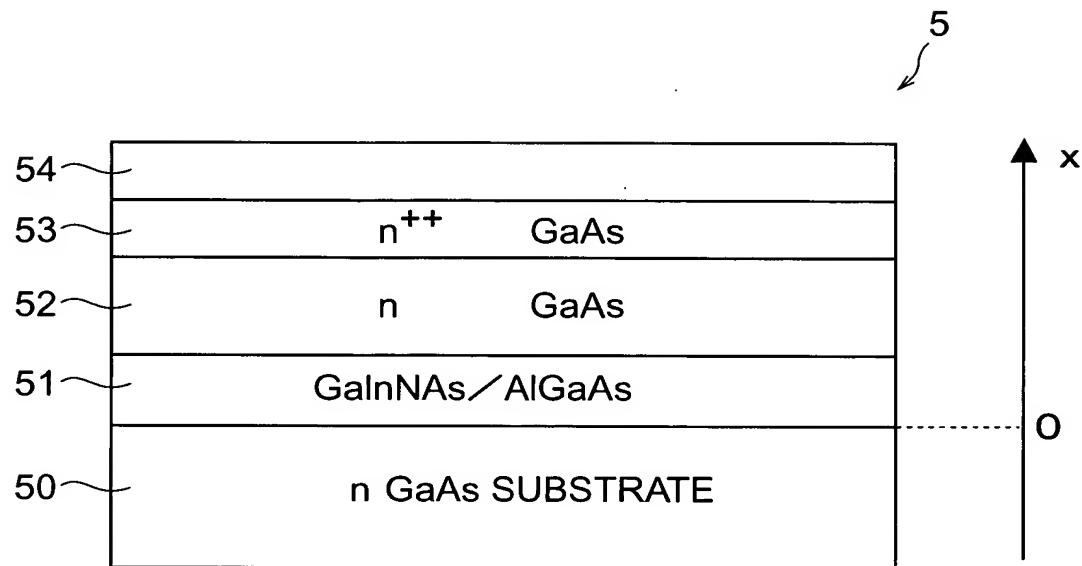


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**Fig.7**

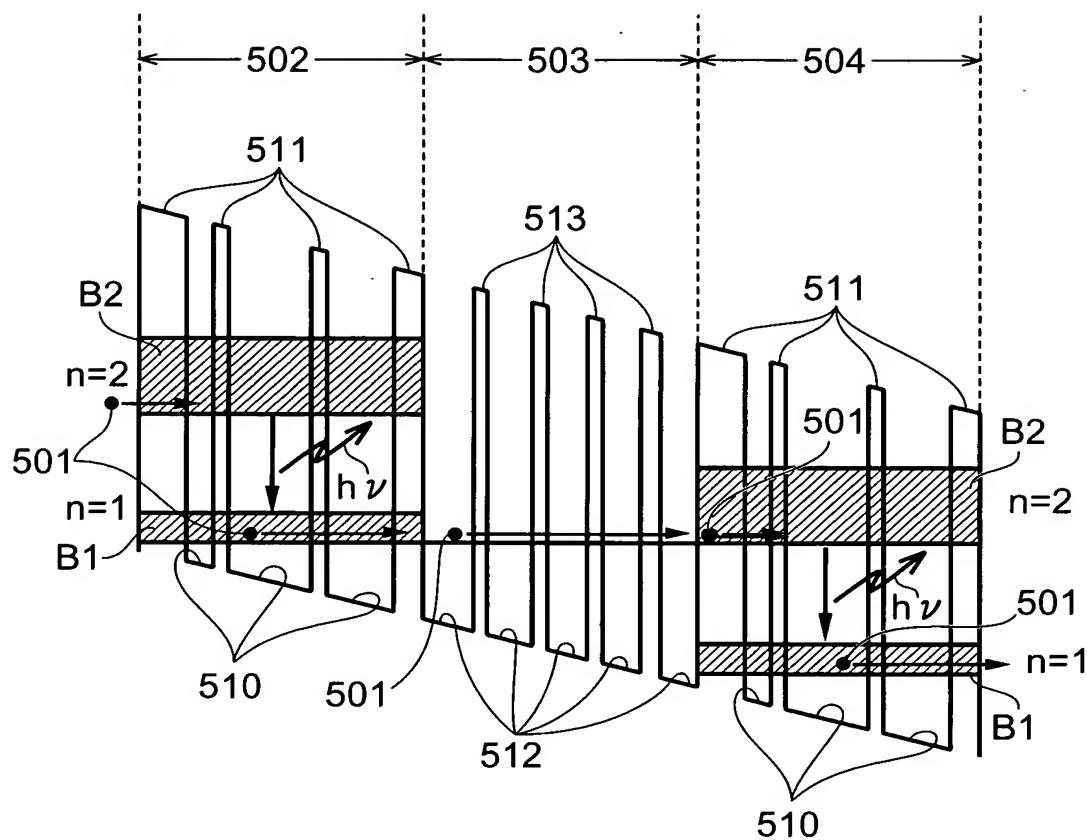


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***Fig.8***



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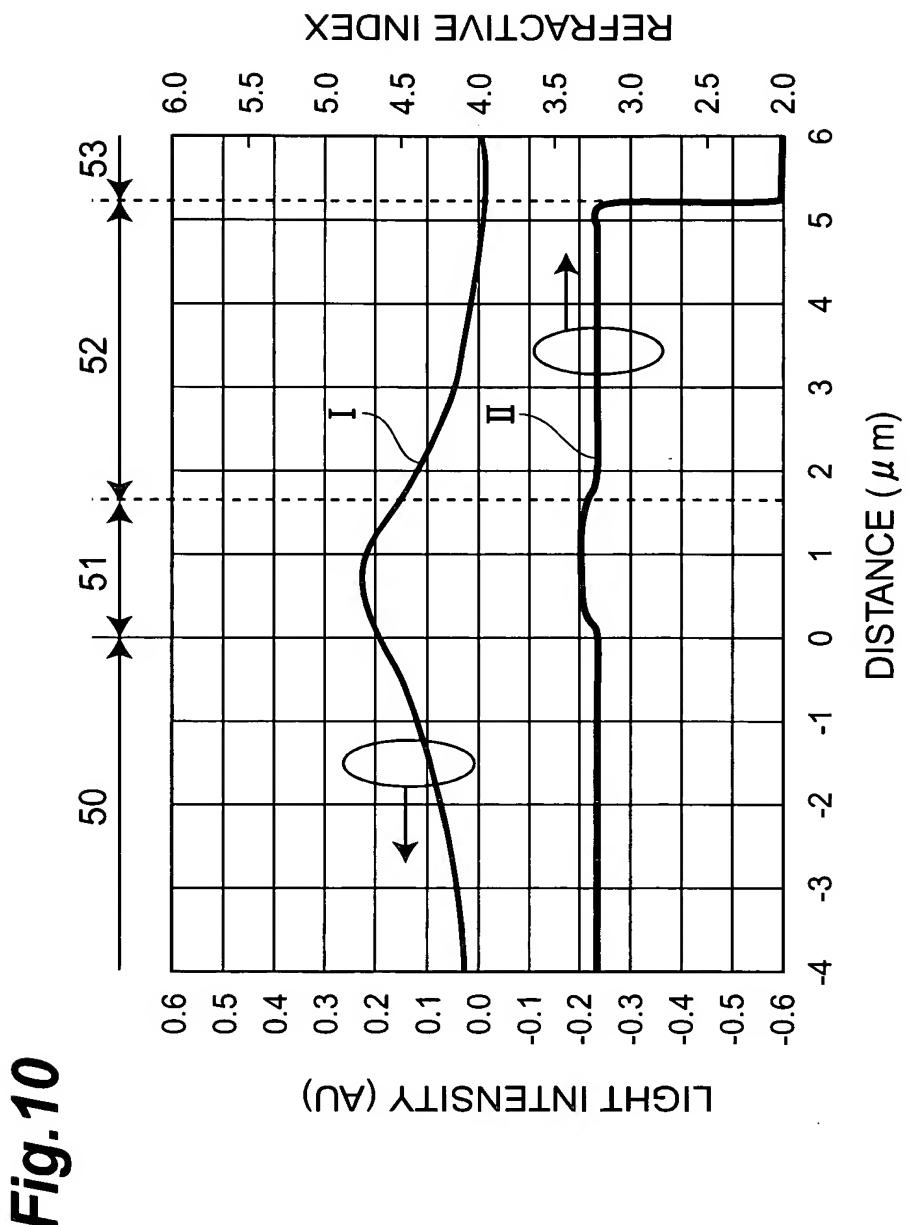
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***Fig.9***

	LAYER COMPOSITION	THICKNESS(nm)	CARRIER DENSITY (cm <sup>-3</sup> )
<b>INJECTION LAYERS</b>	GalnNAs	2.1	UNDOPE
	AlGaAs	2.5	UNDOPE
	GalnNAs	2.3	$1.6 \times 10^{17}$
	AlGaAs	2.5	$1.6 \times 10^{17}$
	GalnNAs	2.3	$1.6 \times 10^{17}$
	AlGaAs	2.3	$1.6 \times 10^{17}$
	GalnNAs	2.8	UNDOPE
	AlGaAs	2.0	UNDOPE
	GalnNAs	3.2	UNDOPE
<b>QUANTUM WELL LIGHT EMITTING LAYERS</b>	AlGaAs	3.4	UNDOPE
	GalnNAs	4.0	UNDOPE
	AlGaAs	1.7	UNDOPE
	GalnNAs	4.9	UNDOPE
	AlGaAs	2.0	UNDOPE
	GalnNAs	1.5	UNDOPE
	AlGaAs	5.8	UNDOPE

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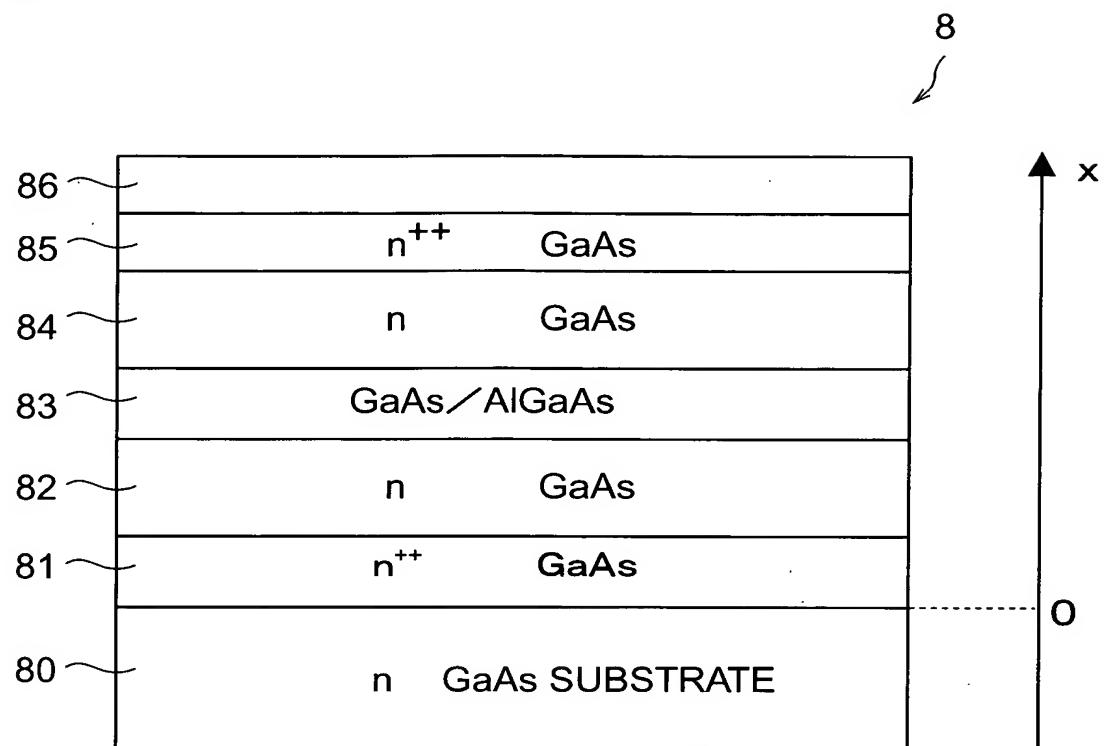


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**Fig. 11**



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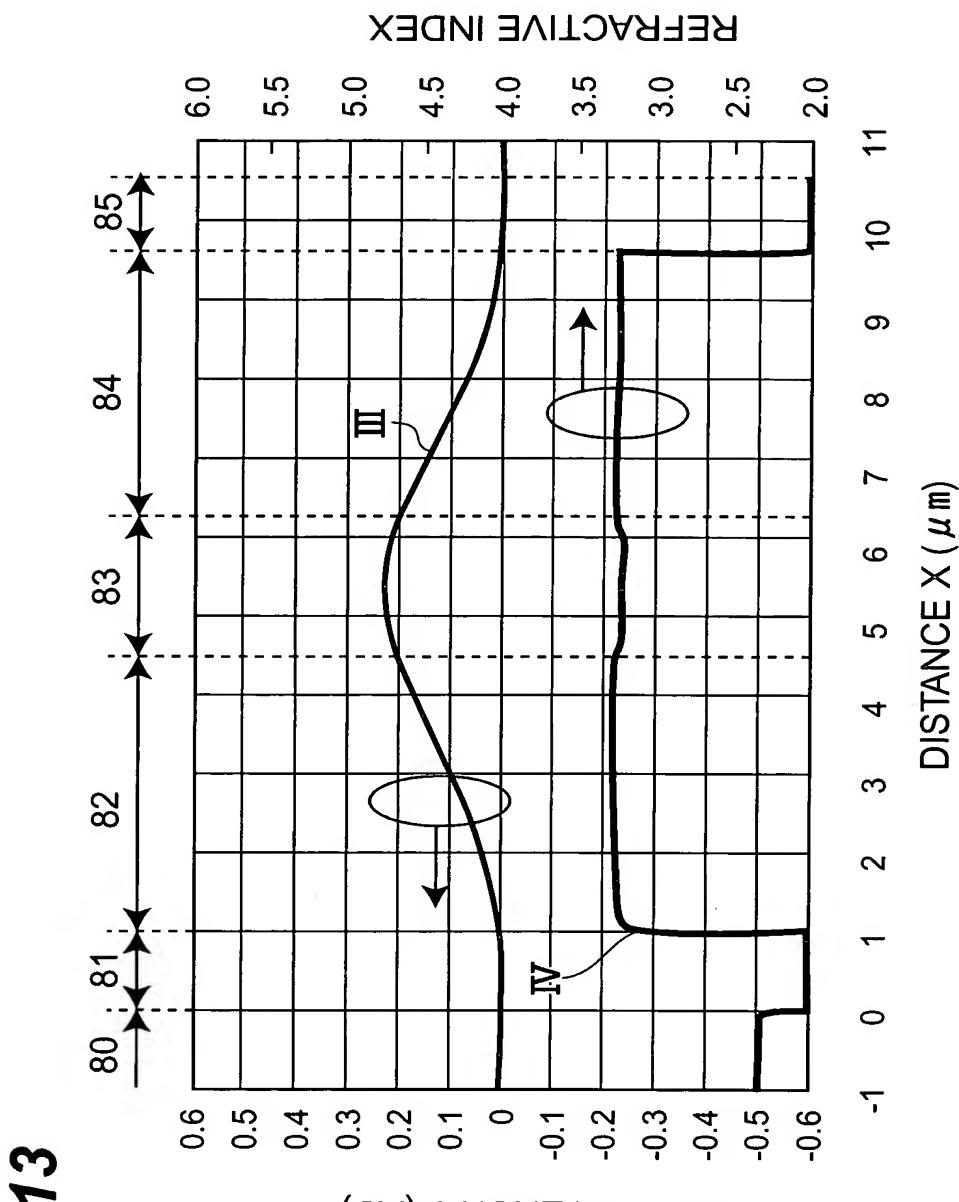
***Fig.12***

	LAYER COMPOSITION	THICKNESS(nm)	CARRIER DENSITY (cm <sup>-3</sup> )
INJECTION LAYERS	GaAs	2.1	UNDOPE
	AlGaAs	2.5	UNDOPE
	GaAs	2.3	$1.6 \times 10^{17}$
	AlGaAs	2.5	$1.6 \times 10^{17}$
	GaAs	2.3	$1.6 \times 10^{17}$
	AlGaAs	2.3	$1.6 \times 10^{17}$
	GaAs	2.8	UNDOPE
	AlGaAs	2.0	UNDOPE
	GaAs	3.2	UNDOPE
QUANTUM WELL LIGHT EMITTING LAYERS	AlGaAs	3.4	UNDOPE
	GaAs	4.0	UNDOPE
	AlGaAs	1.7	UNDOPE
	GaAs	4.9	UNDOPE
	AlGaAs	2.0	UNDOPE
	GaAs	1.5	UNDOPE
	AlGaAs	5.8	UNDOPE

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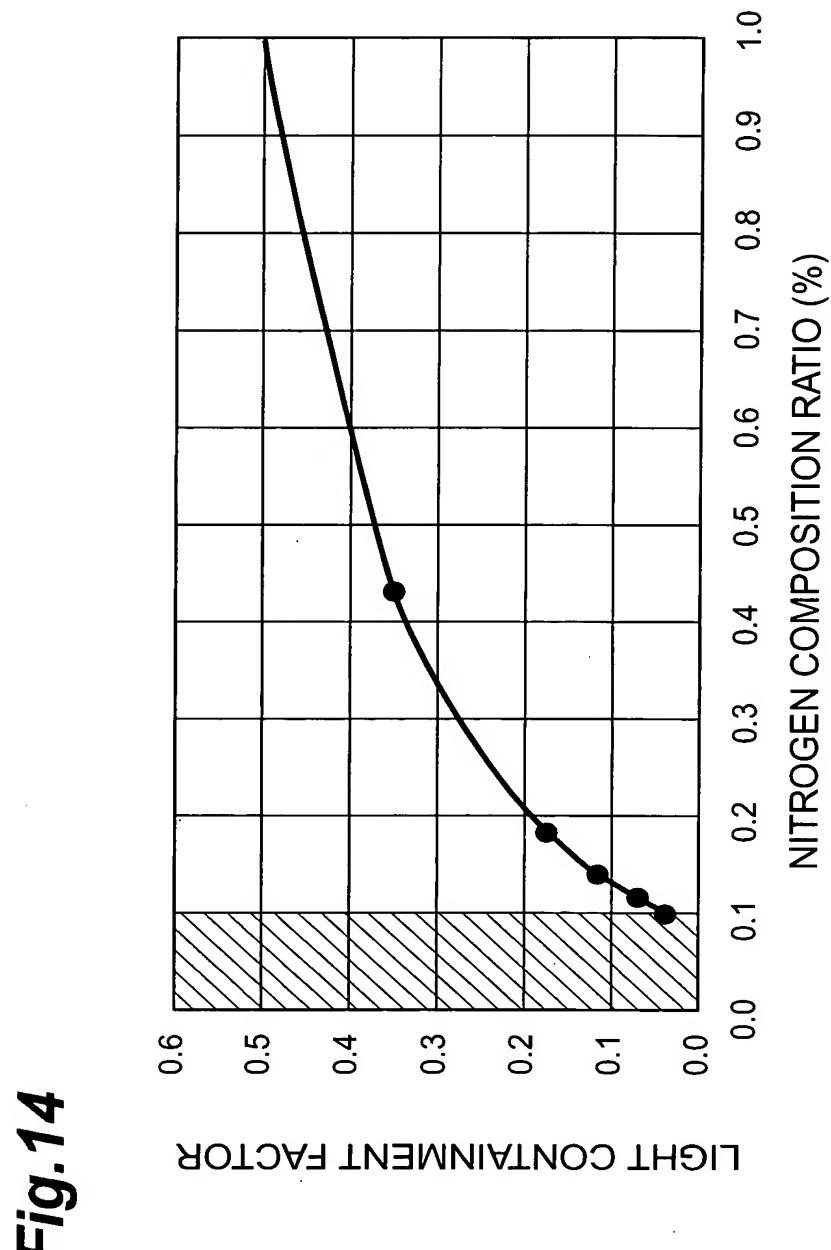


**Fig. 13**

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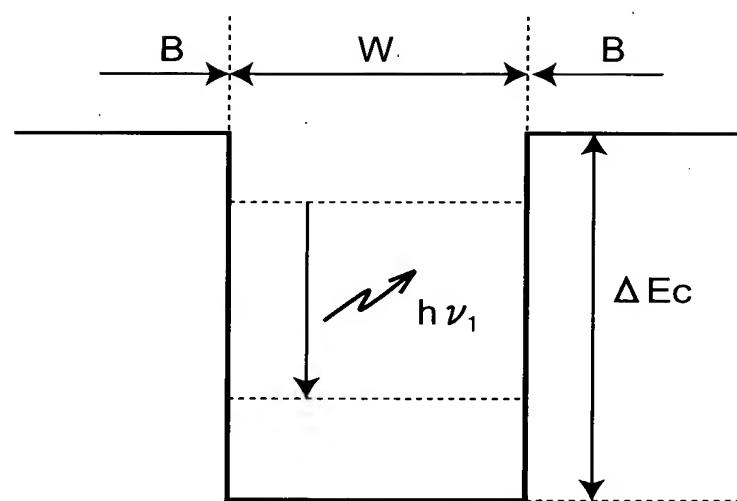
**Fig. 14**

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***Fig. 15***

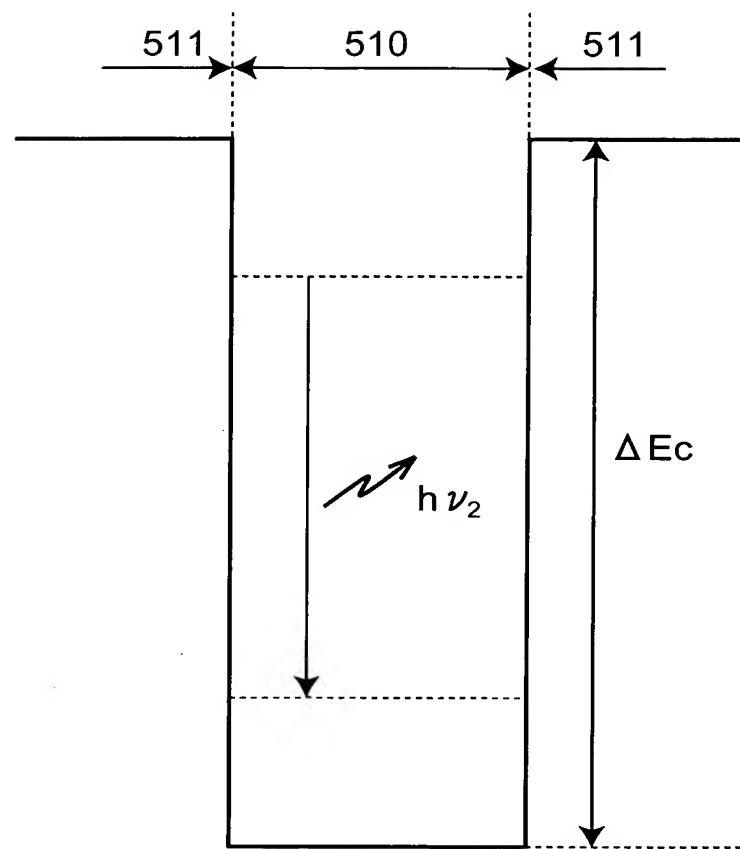


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***Fig. 16***

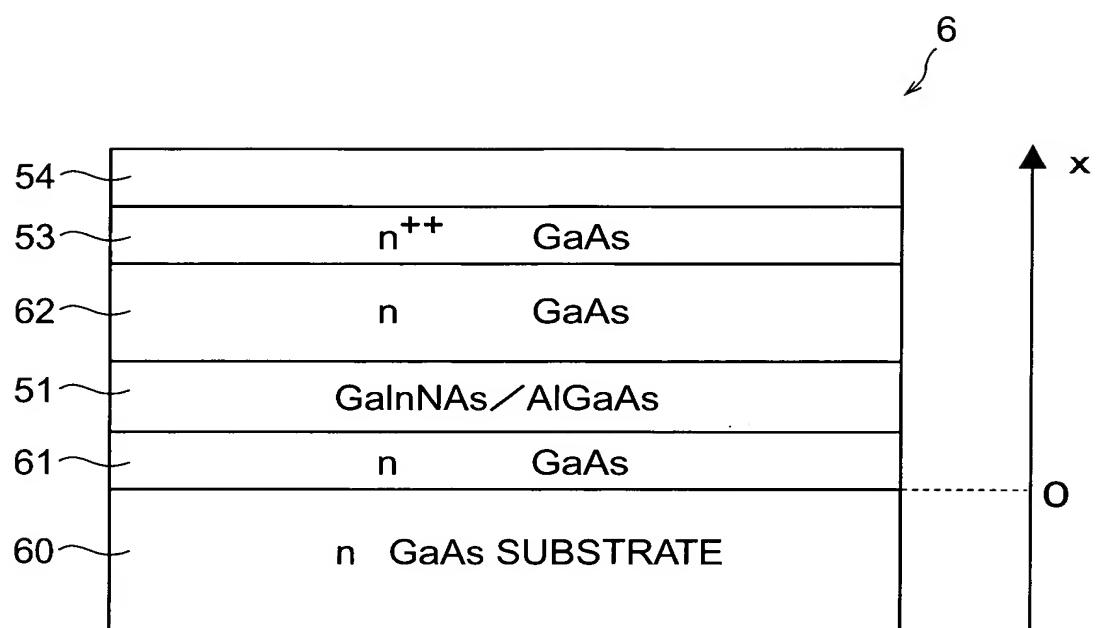


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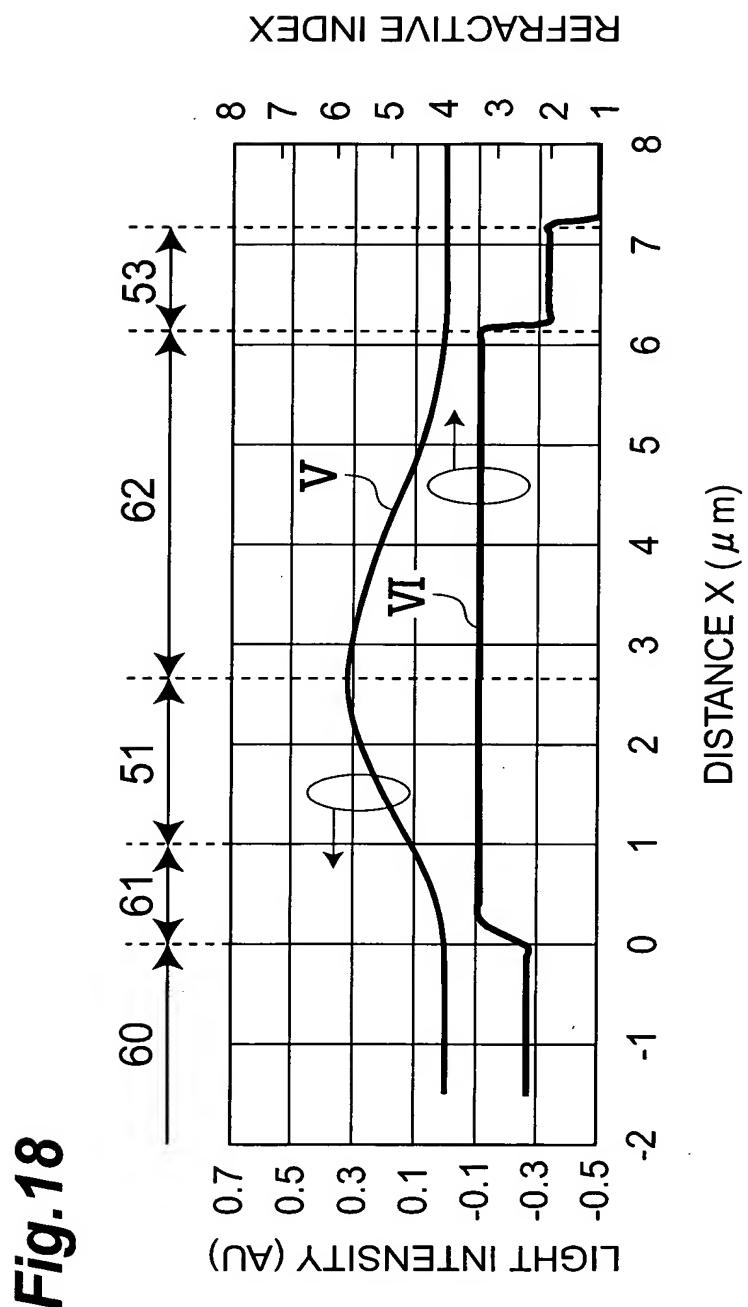
***Fig.17***



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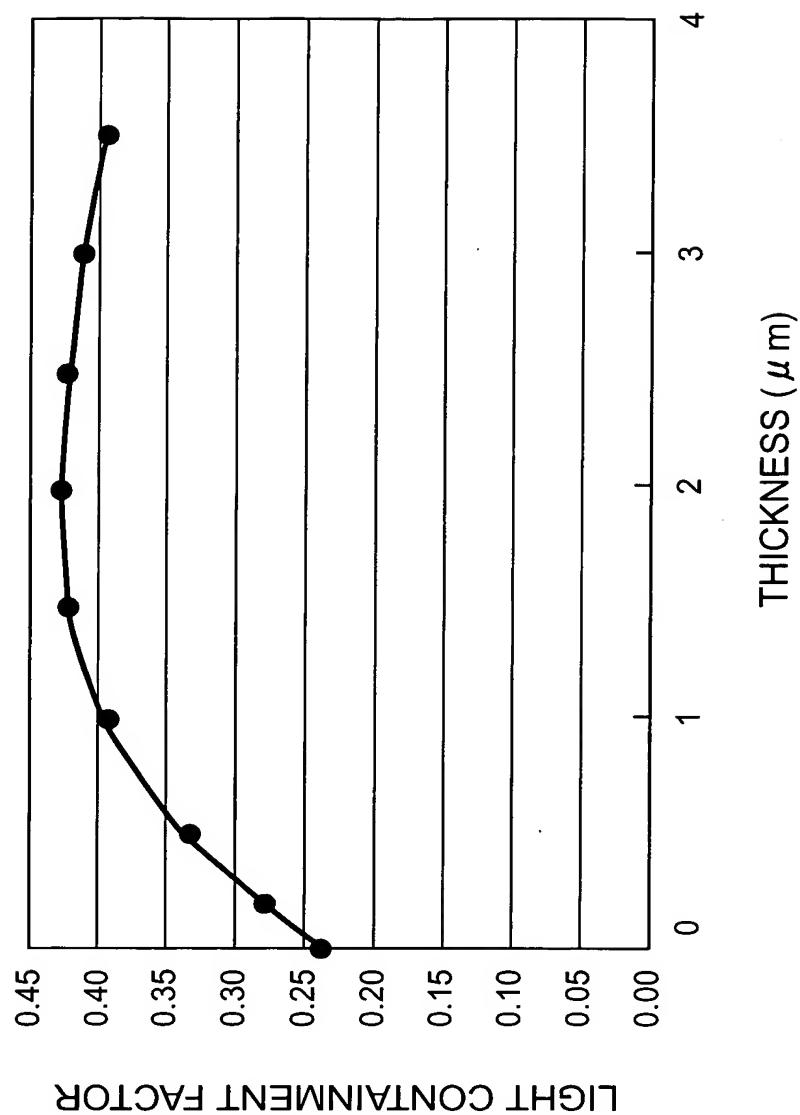
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**Fig. 19**

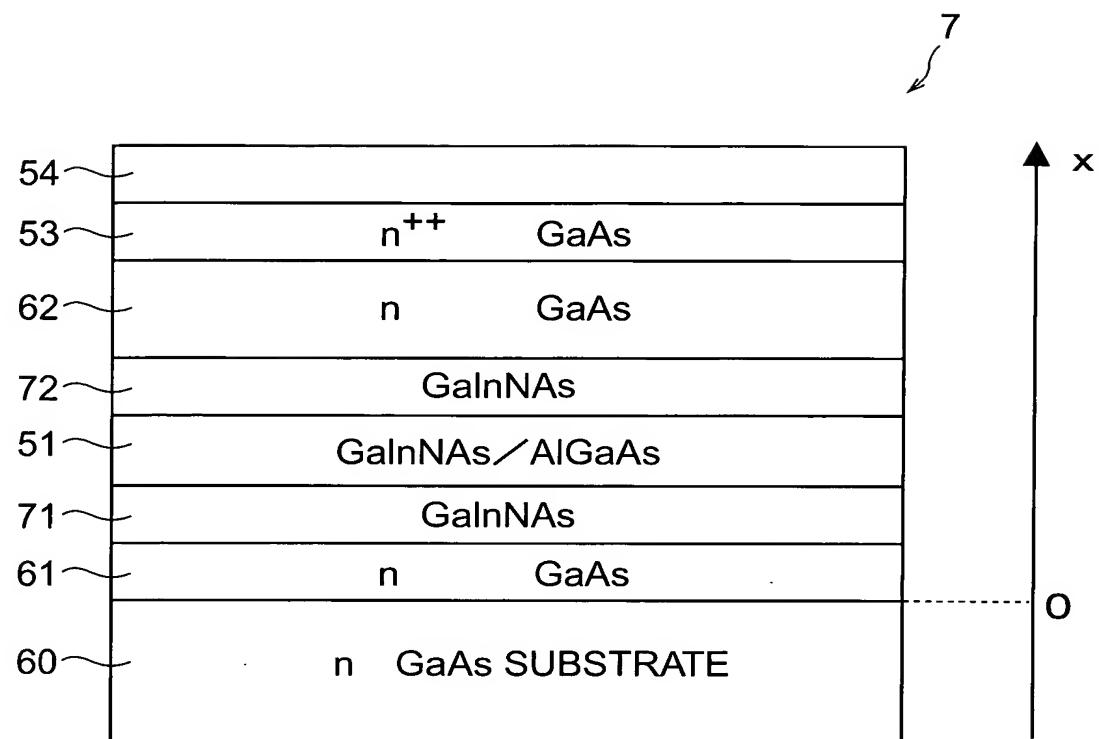
LIGHT CONTAINMENT FACTOR

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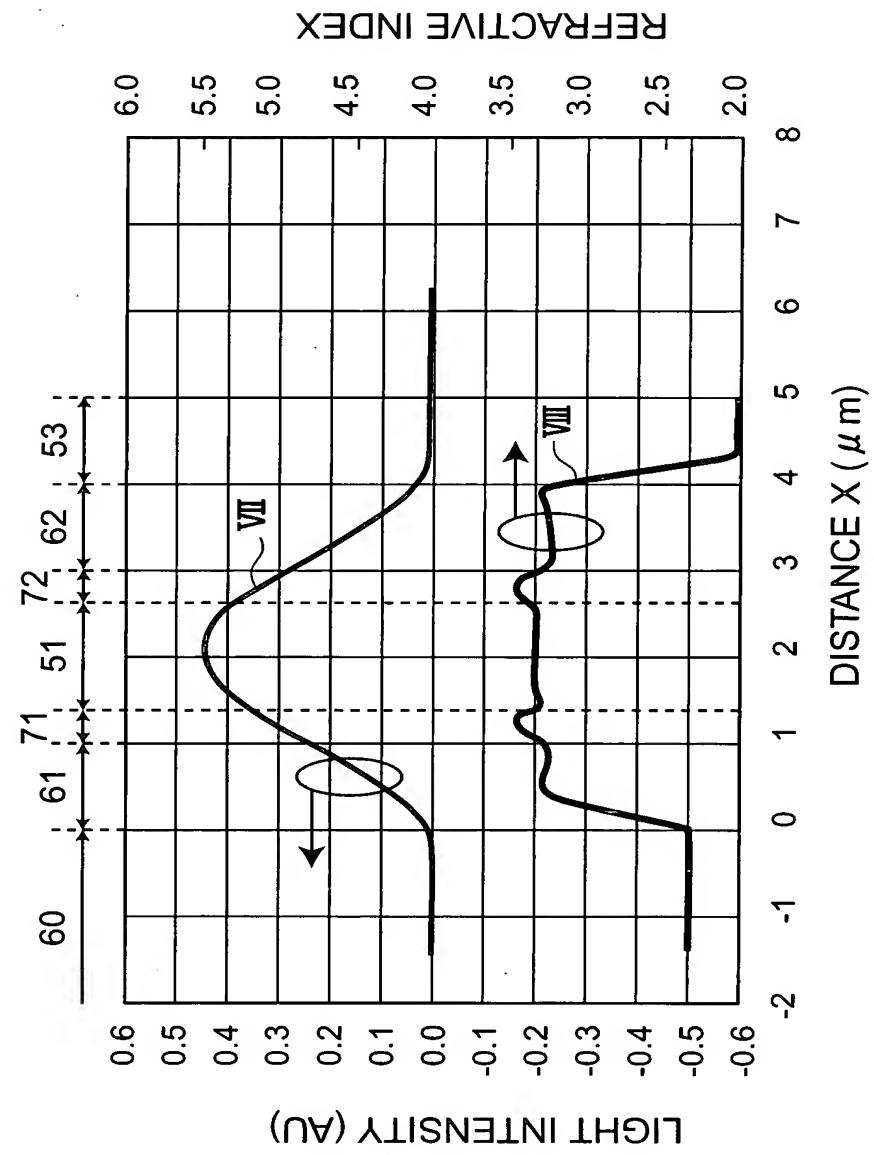
***Fig.20***



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*Fig.21*